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AUTHOR Snow, Catherine E.; And Others

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ABSTRACT

Formal definitions are one example of "decontextualized" language use, in which reliance on background knowledge shared with the interlocutor is minimized, and use of conversational devices is avoided. Definitions of English nouns by 137 second- to fifth-grade children, about half of whom were non-native English speakers, were analyzed to assess the children's tendency to use the formal definitional genre, their sophistication in using it, and their tendency to rely on conversational devices during the testing session. Seventy of the children were also tested in French, a second language for most of them. Both the tendency to use formal definitions and the sophistication of the definitions offered were found to increase from second to fifth grade, to be affected by proficiency in the language being tested, and to be related to school achievement as reflected in standardized test scores. Use of conversational devices during the testing session was negatively related to achievement and to language proficiency. The developments in sophistication of formal definitions observed and the relationships to school achievement found suggest that performing well on the task of giving formal definitions requires skill in the use of decontextualized language, that such skill is independent of lexical or syntactic knowledge, and that the decontextualized skills may be crucial to success in classroom discourse and in literacy. (Author/MSE)

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SECOND LANGUAGE LEARNERS' FORMAL DEFINITIONS: AN ORAL LANGUAGE CORRELATE OF SCHOOL LITERACY

Catherine E. Snow, Herlinda Cancino,
Paulina Gonzalez and Elizabeth Shriberg

Harvard Graduate School of Education

TR5

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For further information contact:

Amado M. Padilla, Director
Center for Language Education and Research
1100 Glendon Avenue, Suite #1740
Los Angeles, CA 90024

ABSTRACT

Formal definitions constitute one example of "decontextualized" language use, in which reliance on background knowledge shared with the interlocutor is minimized, and use of conversational devices is eschewed. Definitions of English nouns by 137 second- to fifth-grade children, about half of whom were not native speakers of English, were analyzed to assess the children's tendency to use the formal definitional genre, their sophistication in using it, and their tendency to rely on conversational devices during the testing session. Seventy of the children were also tested in French, a second language for most of them. Both the tendency to give formal definitions and the sophistication of the formal definitions offered were found to increase from second to fifth grade, to be affected by language proficiency in the language of testing, and to be related to school achievement as reflected by California Achievement Test scores. Use of conversational devices during the testing session was negatively related to achievement, and to language proficiency. The developments in sophistication of formal definitions observed and the relationships to school achievement found suggest that performing well on the task of giving formal definitions requires skill in the use of decontextualized language, that such skill is independent of lexical or syntactic knowledge, and that the decontextualized skills may well be crucial to success in classroom discourse and in literacy.

The relation between vocabulary size and reading skill is frequently noted, well-replicated, and strong (e.g., Anderson & Freebody, 1981; Davis, 1944, 1968, 1972; E.L. Thorndike, 1917; R.L. Thorndike, 1971, 1973). There is little agreement, though, on why a large vocabulary size relates to reading achievement. A variety of relationships could be hypothesized:

1. Recognizing unknown words simply from orthographic shape is difficult, even for skilled readers. Having some sense of what a word means makes it easier to recognize that word in a text which has semantically prepared one for it.
2. Having heard a word pronounced helps in the task of mapping from symbol to sound. This is especially important for long words in which stress and vowel quality might be in doubt. Thus, knowing a word orally helps in the task of word-recognition by easing the mapping from orthographic to phonological representation.
3. Knowing a large vocabulary is a marker for possessing the world knowledge that aids comprehension of challenging reading material.
4. Vocabulary is acquired through reading, at least after grades four or five. Thus, vocabulary size correlates with reading skill simply because good readers have had more opportunity to increase vocabulary.
5. Acquiring a large vocabulary requires the metacognitive skills of analysis of one's own knowledge. These same skills enable one to be a sophisticated reader of difficult materials, applying strategies that help one to isolate what is novel or difficult to understand in the texts being read.

It might well be the case that all these explanations for the relation between vocabulary and reading contain a grain of

truth. However, it is the goal of this paper to consider yet another explanation, one that focuses on depth of word knowledge more than breadth of familiarity with words, on the process by which children acquire vocabulary, and on the way in which vocabulary knowledge is tested. The proposal includes a claim that "vocabulary knowledge" is more complicated than is commonly thought; we must define what we mean when we say people "know the meaning of a word." Does this imply they can use it in a sentence?, they can select it from among alternatives as the correct synonym or antonym?, they can generate it spontaneously when given a definition?, they can give information about the real world referent of the word?, or they can give a formal definition of the word, such as we would find in a dictionary? Clearly, we all know many words by the first of these criteria that we would not know by the latter, more stringent ones. In explicating these varying levels of knowledge of a word's meaning, we do not even deal with issues such as appreciation for slight differences of meaning in different contexts, or for relationships among the various meanings of polysemous words, all within the competence of truly sophisticated users of a word. These distinctions become especially important when discussing or assessing the vocabulary knowledge of second language learners, who have typically had less opportunity than first language speakers to acquire the full depth of information about the words they know.

We propose here that the ability to give a formal definition of a word, while it may reflect no greater knowledge about the word's meaning than using the word correctly in a variety of sentences, or talking about the real-world referent of the word, nonetheless predicts better to reading skills and to "literacy" in general. In other words, we will claim that knowledge of word meanings is a less accurate predictor of literacy than being able to talk about word meanings in a particular, culturally prescribed way.

When we speak in this context of "predicting literacy", what exactly do we mean by literacy? The literacy outcome measures we are using are school-recognized literacy skills: reading and writing at a level that meets the demands of the classroom teacher, using books as sources of information, performing well on standardized tests, producing narratives, expositions, explanations, and arguments both orally and in writing that fulfill criteria of technical correctness, cohesion, comprehensibility, and style. We believe that, at least as instantiated in good schools that provide competent literacy instruction, these classroom demands map well on to the demands of the world outside. Students who can read the textbooks, write the reports, and pass the tests set by such classrooms can also fill out job application forms, scan want ads, understand New York Times editorials, and ultimately deal with college textbooks, writing assignments, and lectures as well.

Formal definitions, at least in the average elementary classroom, play a central role in vocabulary training. In a study that included observations of second- through seventh-grade classrooms in an urban school system (Snow et al, in press), the most common vocabulary teaching device we saw was giving a list of words, and asking children to copy definitions out of the dictionary for homework. We observed the following kinds of interactions in which a seventh-grade teacher conducting a vocabulary homework review insisted on and hinted about how to give a more formal definition than the child had offered. The teacher asks for a definition of treasury (the students were supposed to have written these definitions the night before):

Student: Funds
Teacher: It can be a thing or a place
Student: A place where public or private funds are kept.

Similarly, this teacher often did not accept definitions that revealed knowledge about the word's meaning but that violated the lexical class of the target word, e.g.:

Teacher: Colonize
Student: New settlers remaining in a new state.
Teacher: You've got the right context but you're using the wrong part of speech...what part of speech is colonize?
Student: A verb.
Teacher: Right, now what you just gave me is a ...
Students: Noun.
Teacher: How about conference?
Student: To consult.
Teacher: Again, that's the same thing. To consult is a verb form. You want the noun consultation.

(The teacher in this last case is using rather stricter criteria for lexical class than he normally did. In this classroom, as in many others nowadays, students were regularly advised to conference with peers on writing projects.)

The technique of copying definitions as a way of learning vocabulary words was used by teachers in all the grades, the only difference being that the lists of words got longer as the children got older. Some teachers, like the one above, asked the children to use each word in a sentence as well. The rather peculiar sentences that often resulted gave further evidence that children had learned neither precise meanings or syntactic sub-categorizations from copying definitions. Examples of words whose meaning was not learned from the exercise of looking the words up in the dictionary abounded in the vocabulary lesson observed.

Teacher: doctrine
Student 1: Something that is taught

Teacher: OK, usually something of value that is taught. Doctrine - teaching. How can I use it? Can I say I go into school and I doctrine? Anyone have any sentences with doctrine?

Student 2: Tenet

Teacher: What does that mean?

Child: like someone who lives in the apartment next to you.

Teacher: No, you're using a word you don't know...

Student 3: My father is going for his doctrine degree.

Teacher: (explains 'doctorate')

Student 4: I like to doctrine something...

Teacher: Can you give me an example of a sentence with depression?

Student 4: The girl showed a lot of depression.

Teacher: definition for moderate?

Student 5: To make more modern, more stylish.

These examples, and many more analyzed by Deese (1967) and by Miller (in press; Miller & Gildea, 1985) reveal that definitions are not a good source of information about word meaning, at least to children who do not yet fully control the definitional genre productively. Nonetheless, the practice of using definitions in vocabulary training persists, though more innovative methods were occasionally observed. One fourth-grade teacher, in addition to providing a wide variety of literacy materials and of enriching experiences for her class, used opportunities like the ubiquitous classroom helpers for vocabulary training. In her class, the student who was responsible for watering the plants was called the horticultural expert, while the student who carried messages to the office was the communications consultant.

The general use of the copy definitions method for teaching vocabulary is somewhat discouraging, since research evidence

confirms the conclusion from interactions like those cited above, that children--who are, in general, rather remarkably efficient word learners--do not learn either the meaning or the appropriate usage of a word from such exercises. Dickinson (1984), for example, showed that children could learn something about both the semantic restrictions on use of a novel word and the syntactic class of a word from hearing it used just once or twice in context, but that before fifth grade children learned nothing at all from definitions, and after fifth grade less than from the other methods of presentation. Furthermore, it seems that children do not spontaneously organize the knowledge they have about word meaning into definitional forms. Watson (1985), Litowitz (1977), and Snow (1986) have shown that control over the formal definition develops slowly throughout the elementary school years, and Watson suggests that considerable specific teaching goes on before it is acquired.

Why are formal definitions so hard, both to produce and to learn from? Clearly, the problem is in the definitional form--not knowledge about the word itself--since children fail to give formal definitions for words they know very well, and about which they can, if asked, give all the information that should be incorporated into the definition. From our perspective, the qualifier <u>if asked</u> is a very important one--it suggests that, for this task as for many others, children have an easier time in a conversational context. With the help of an adult to organize information, elicit superordinates, respond comprehendingly to examples, and supply words for gestures, even very young children can convey a large amount of information about the meaning of a word. But they are typically unable to supply sufficient information or to organize it autonomously, without the help of an adult interactant.

We feel that certain home and school interactions are instrumental in getting children to think about words from a definitional perspective. These may not be the same interactions that help children to acquire a large vocabulary. Most

vocabulary tests give credit for recognition of fairly general features of word meaning; the multiple choice test, for example, requires simply choosing which of four words is the closest synonym. Even the WISC, which judges word knowledge based on spontaneously offered word meanings, bases scores on evidence that children know what the word means, not on evidence that they can actually define it. Perhaps the clearest way to distinguish between what we see as evidence for knowledge of the word's meaning (which, if the word is simple enough, any child can demonstrate) and evidence of knowledge of how to define the word is to think about what the child is actually telling one about--the word or its referent. Typical of young children's responses to requests for definitions are examples and personal reports: "What does cat mean?" "My aunt has one and it's all furry and has a long tail." Typical of truly definitional responses are attempts to provide general information that do not presume shared knowledge between speaker and listener: "cat is a domesticated mammal which is related to the lion". Although hypotheses about the home or the school interactions that generate this formal definitional skill are, at the moment, purely speculative, it seems likely that at least the following kinds of experiences might help generate the "definitional perspective:"

1. talk about words and what they mean
2. talk about words' relationships to one another
3. talk about foreign languages and relationships among words across languages
4. talk about categories and classification
5. talk about distinctions among classes and criteria for distinguishing.

In addition, of course, all these activities (and others) are likely to produce increases in children's vocabularies, defined as the ability to score well on a vocabulary test, or to use and

to understand words in context. Thus, it would not be surprising if tested vocabulary size correlated with definitional skill, simply because many of the home and the classroom activities that promote definitional skill also promote vocabulary growth. We contend, though, that the ability to give formal definitions is isolable from word knowledge, and that it will correlate even more highly with measures of reading and writing skill, particularly in the later grades, than will vocabulary size tested with contextualized tasks.

Our beliefs about the diagnostic value of definitional skill are related to our hypotheses that children's abilities at all "decontextualized" language tasks relate increasingly to reading skills with age. "Decontextualized" here refers to language tasks which do not offer children the kind of contextual support typical of conversational encounters with familiar adults:

1. Decontextualized tasks require speaking to a distant audience, who can provide no interactive help with clarification of the message nor reassuring signals that the message is being successfully formulated.
2. In decontextualized tasks, the speaker has no right to assume shared background knowledge with the audience, whereas in contextualized tasks the presumption of shared knowledge is appropriate.
3. In addition, the content of the message structure may be more complex in decontextualized tasks, thus requiring a more elaborate exploitation of lexical and syntactic resources to express it adequately.

Viewed from a certain perspective, the task of giving word definitions need not be decontextualized. After all, it can be administered interactively, and it would be a reasonable presumption on the child's part that the adult knows the meanings of the words and shares much relevant information about the referents of the words. However, it became clear early on in our

research, which involved testing children using the WISC-R vocabulary items, that some children chose to treat this task as a decontextualized one, giving autonomous, well-planned, lexically specific information about the word meaning without incorporating either conversational devices or personal information. Other children tended, in contrast, to treat the request for a definition as the introduction of a new conversational topic, and to provide information but no definition in response.

Why do we think children's definitional skill is worthy of study? What is the evidence that the ability to give definitions is related to reading or academic achievement in general? We have found social class differences in both the tendency to give formal definitions and the quality of formal definitions given by kindergarten children. Middle class children scored higher on both measures, though the communicative adequacy of their definitions and their PPVT scores were not significantly greater than those of working class children in the same classrooms (Dickinson & Snow, in press). We will present in this paper results from a study of 137 school-aged children, many of them giving definitions in a second language learned at school, suggesting interesting relationships between performance on our definitions task and various indicators of academic achievement. A priori, though, it seemed to us likely that the definitions task was one worth pursuing for three reasons:

1. We have observed (as has Watson, 1985) teachers request definitions from children during classroom instruction, and persist in eliciting information until 'good' formal definitions emerged. Thus, it seems likely that skill in giving formal definitions is one component of teacher assessments of children's oral language skills.
2. Giving a good definition requires thinking about language--beyond generating effective communication, one must assess one's own effectiveness, contemplate

the forms one has produced and that one often uses without contemplation. In this sense, the task is not unlike the task facing a writer, to read his/her own writing with the eyes of a stranger in order to assess the need for revision. In fact, we expect that skill in giving formal definitions will correlate with children's tendency to revise during a writing task.

3. As explained above, we feel that performance on the definitions task is a marker for decontextualized language skill in general. We feel that the reading and writing tasks expected of children in the later elementary, middle and high school grades cannot be accomplished without both productive and receptive decontextualized skills. Preliminary results from a small study of 20 children suggest that giving formal definitions correlates highly with using indefinite forms to introduce new referents in a picture description task, yet another indicator that shared knowledge is not presumed (Davidson, Kline, & Snow, 1986).

In the study to be described below, we analyzed definitions offered by 137 children attending second through fifth grade at the United Nations International School (UNIS), a large private school in New York City that serves the international community of New York as well as upper middle class American families and the United Nations community. In addition to data about their performance on the definitions task, we have analyzed the children's performance on the California Achievement Test, which is administered by the school yearly. Analyses have been carried out for the entire population and separately for the various grade levels, in order to test the hypothesis that decontextualized language skill becomes increasingly important in predicting reading performance as children get older.

The School and the Children

Before describing the test and presenting the results, it is important to give a picture of the school, the curriculum, and the nature of the student body. UNIS is a K through 12 school, divided into a Junior House, Middle School, and High School. All the data to be presented here were collected in the Junior House, where there are two to three classes of 18 to 26 children each at each grade level. A typical class includes some native English speaking children, some native speakers of other languages who may have attended school in English before arriving at UNIS, others who have learned English at UNIS with the help of ESL classes and are still receiving special help from their classroom teacher with language and literacy skills, and others who are still spending up to three hours a day in ESL. All the children who are receiving neither ESL nor special in-classroom support attend foreign language classes in French, at whatever level (beginner, intermediate, advanced) is appropriate. The small number of native French speakers in the school typically attend the advanced French classes, in the company of children who have been taking French at the school for several years. Despite the fact that 65% of the student body is not native English speaking, and for many of the children English is a third or a fourth language, the whole school averages for the CAT subtests are typically in the 75th to 90th percentile range. The curriculum in the Junior House is particularly strong in writing, which was a major curricular focus of all the first through fifth grade teachers, though the CAT results suggest that reading, spelling, and math are also receiving considerable emphasis. The children participate in a rich program of art, music, and physical education in addition to their academic subjects.

The characteristics of the 150 children in our total sample of second through fifth graders are presented in Table 1. We selected children whose parents agreed to giving us access to school records and to our testing their children, but made special attempts to recruit into the sample children who could be

Table 1

Characteristics of the 150 Children in the Total Sample.

Grade	n	% native in English	% native in French	boys	girls
2	30	72.4	10.0	18	12
3	36	66.6	13.9	17	19
4	36	41.6	13.9	15	21
5	48	51.4	16.7	22	26

tested in at least two languages. The English battery has been administered in its entirely to 137 children. For 83 of the children, the complete test battery was administered in French as well, and for an additional 30 a somewhat simplified French battery was used. In addition, we have so far tested 24 children in another native language, and some in two. The data to be presented here are based primarily on the English test data, and secondarily on the French battery.

The Definitions Task and Scoring Procedure

The test is essentially identical to the vocabulary subtest of the WISC-R; children are given a word and asked "tell me what xxx is" or "what does xxx mean?" The words selected were simple nouns, all likely to be familiar to even the youngest children in the sample (clock, hat, umbrella, donkey, diamond, thief, nail, alphabet, etc.).

The definitions offered were scored from transcriptions in two stages. First, the child's definition was categorized as either a formal or an informal definition. To be categorized as a formal definition, it had to contain an eqivalency statement and some form of a superordinate (e.g., a donkey is an animal; a diamond is a thing; a thief is someone who...). If the equivalency statement occurred anywhere in the child's talk, the entire segment of talk relevant to that word was classified as a formal definition, and the presence or absence of other categories of information was noted within the formal definitional scoring. The child received a score for any formal definition on Formal Definitional Quality (FDQ) and Formal Definitional Supplement (FDS). The FDQ score reflected the quality of the superordinate chosen, the presence and completeness of any restrictive relative clause, and the presence of relevant crucial semantic features. Additional information in the form of descriptors, examples, functions, etc. was scored under FDS. If the definition offered did not qualify as formal, all the information provided was scored under "informal definitional quality" (IDQ). Summary scores per word could thus

be computed for either FDQ or IDQ, but not both. Typically, over the ten words the child received a score under both categories, but tended to cluster his/her definitions under either the formal or the informal category. Both summed scores per category and average score per category have been analyzed, but the results from the two analyses are quite similar. For simplicity's sake, only the averaged FDQ (i.e., total FDQ divided by number of formal definitions given, to give a per item score) will be discussed here. A futher score was calculated to assess the degree to which each child relied on conversational style during the definitions task; such responses as pointing, gesturing, appealing to the tester for help, asking questions, inserting phrases like "you know", etc. into the definition were counted, and the number of them was summed per word then averaged over the total number of words responded to in order to generate a score on conversational features (CF). Finally, each definition, whether formal or informal, was scored on a four-point "communicative adequacy" (CA) scale, and the communicative adequacy score averaged over the total number of words. Scoring of the French words was identical to the scoring of the English words (though a few of the words were not direct translations, for technical reasons).

The California Achievement Test (CAT)

The CAT is a standardized achievement test which produces two kinds of scores (a grade level equivalency and a nationally normed percentile score) on each of a number of subtests, as well as a total battery score. We will report here on the Total Reading, Total Language, and Total Math scores. The CAT is administered by the school annually, in October, and CAT scores were available from school records for every year each child had attended UNIS. Since different children, however, may have arrived at different points, the exact n for the CAT scores for any grade varies considerably.

Development of Definitions

The first question of interest is the basic developmental pattern of the definitions scores. Do the older children score better, and if so on which subscores from the definitions task? While we do in general expect that the older children will score better than the younger ones, it is not clear that a perfect correlation with age can be expected. The cultural backgrounds of the children in the sample are highly divergent, and their home environments therefore also extremely heterogeneous. Since we expect that home variables contribute to the development of the definitional perspective, we predict that some younger children will be better at formal definitions than some older children. In addition, of course, school variables can affect definitional skill. The school is much more homogeneous across the different children, so we expect an increase in formal definitional scores with grade in school.

The FDQ and the FDS scores increased significantly from second to third, and from third to fourth grades (see Table 2; Snow [1986] gives more detail on these and all the developmental analyses). There were only small differences between grades four and five, suggesting that the acquisition of definitional skill hit a ceiling at about grade four. This ceiling may, of course, be temporary. It was not the case that the fourth graders were giving perfect formal definitions, nor were they giving exclusively formal definitions; only 79% of their definition responses were formal. Communicative adequacy scores also increased through fourth grade but then leveled off between fourth and fifth grades, again at a level well below the maximum possible four points.

The quality of informal definitions did not change between second and fifth grades, nor did the use of conversational features. Thus, second graders were just as good at giving information informally about the meanings of these (quite simple) words as were fifth graders, although they were significantly

Table 2

Means and Significant Differences, English Definitions Scores

	Grade					
	2	3	4	5	F	Significance
%FD	49%	66%	79%	79%	12.00*	.001
FDQ	6.63	7.33	8.18	8.40	5.90	.001
FDS	0.71	1.08	1.19	1.05	3.22	.025
IDQ	2.16	2.50	2.20	2.08	0.38	ns
CF	0.06	0.05	0.03	0.08	0.66	ns
CA	0.99	1.33	1.58	1.64	11.99	.001

*df = 3/129

worse at packaging that information into the specialized discourse genre of the formal definition.

French definitions scores showed no significant grade effects (see Table 3). This lack of effect has several probable explanations. The number of children tested in French was lower, making it harder to find significant effects. Proficiency in French was much more variable than proficiency in English and was lower for the vast majority of the children in the sample (those acquiring French in foreign language classroom with no home support). The samples tested in French were also less comparable at the various grade levels, with more native speakers in the younger grades and more foreign language students in the older grades. Thus, it is not surprising that for this population of children developmental effects found in English could not be replicated in French. The overall difference between English and French scores suggested, though, that language proficiency is one predictor of skill in giving oral definitions, a prediction we tested explicatly as reported in the next section.

Definitions and Language Proficiency

Since the differences between French and English definitions scores suggest that language proficiency can have a strong effect on quality of definitions, ANOVAs were carried out on both English and French scores using as classification variables the following:

1. Home language environment/English (HLEE). All children were identified as belonging in one of five categories with regard to the role of English in their homes: English was the only home language; English was the dominant of two home languages; English was the second of two home languages; English was not among the two dominant home languages; one language, not English, was used at home. This classification was found to have a significant effect on four English definitions scores (see Table 4). Children who were natively monolingual or dominant in English scored higher on FDQ. Interestingly, children from multilingual homes where English was not spoken scored as high as

Table 3

Means and Significant Differences, French Definitions Scores

	Grade					
	2	3	4	5	F	Significance
%FD	39%	68%	70%	72%	1.35*	ns
FDQ	5.58	7.02	5.18	6.79	2.21	ns
FDS	0.56	0.81	0.50	0.76	1.20	ns
IDQ	1.95	1.65	1.39	1.63	0.08	ns
CF	0.25	0.18	0.96	0.83	2.12	ns
CA	1.78	1.35	1.22	1.59	1.33	ns

*df = 3/62

Table 4

Significant Effects of Home Language Environment/English on Definitions Scores

		English					French	
		n	%FD	FDQ	IDQ	CF	n	CF
Monolingual English		49	71	7.99	2.32	.04	20	1.40
English is dominant of 2 home languages		29	79	8.06	1.59	.02	16	0.46
English is second of 2 home languages		30	59	7.60	3.10	.06	18	0.61
English is not among the 2 most important home languages		9	72	6.11	1.89	.22	7	0.06
Single home language, not English		20	66	7.36	1.77	.05	9	0.81
F ratios	df=4/130		3.06	3.35	2.51	3.47	df=4/63	4.45
Significance			.008	.004	.025	.003		.001

natively monolingual or dominant English speakers on %FD, but also scored much higher than any other group on use of conversational features. They evidently recognized the task as one that called for formal definitions, but had greater difficulty formulating such definitions in English. HLEE had only one significant effect on French definitions scores; native monolingual English speakers used many more conversational features in their French definitions, presumably because their French proficiency was lower than that of children from more multilingual home environments.

2. Home language environment/French (HLEF). A similar classification of how the children had been exposed to French generated significant differences on two English definitions scores and three French definitions scores (see Table 5). In English, native French monolinguals used more conversational features than other groups, and scored lower on CA. Children classified as good speakers of French who had acquired it exclusively at school had exceptionally high CA scores. In French, monolingual French children scored highest on FDQ and IDQ, and very low on CF. Interestingly, though, the "fast school learners" of French were almost as good as children who had grown up speaking French on FDQ. The exceptionally good performance of this group of children suggests that there may be a close relation between the skills needed to do well in oral decontextualized language tasks and those needed to excel in formal foreign language learning. The overuse of conversational features by the three groups of children with the least home exposure to French clearly shows the power of the CF score as an indicator of language proficiency.

3. Educational History in English (EHE). As might be expected, children who had been in mainstream English classes throughout their UNIS school careers scored higher on English FDQ than children who had previously had ESL, who in turn scored higher than those still in ESL (see Table 6). Interestingly, the

Table 5

Significant Effect of Home Language Environment/French on Definitions Scores

	English			French			
	n	CF	CA	n	FDQ	IDQ	CF
Monolingual French home	8	.25	1.09	6	8.28	2.74	.07
French one of two home languages	8	.03	1.45	8	7.49	2.29	.06
French used as third home language	3	.00	1.57	2	3.25	2.25	.50
French learned only at school but spoken well	7	.00	1.91	9	7.45	1.50	.63
French learned only at school, average skills	99	.04	1.42	44	5.52	1.18	1.05
F ratio df=4/120		4.13	2.46	df=4/64	4.01	3.02	5.07
Significance		.004	.05		.006	.024	.001

Table 6

Significant Effects of Educational History in English on Definitions Scores

		English			French	
	n	CF	CA	n	FDQ	CF
Always in mainstream classrooms	92	8.06	.03	53	6.33	0.91
Previously in ESL, now in mainstream	29	7.55	.08	11	4.22	0.48
Still in ESL	16	5.96	.17	6	8.14	0.00
F ratio	df=2/133	6.17	4.95	df=2/67	4.22	4.48
Significance of effect		.001	.003		.019	.015

converse difference was significant for use of conversational features; the ESL children used the most, and the fully mainstream children the fewest. In French, the children still in ESL scored highest on FDQ and lowest on CF (see Table 6), because several of them were native French speakers. Fully mainstream English speakers scored better than previous ESL children, because they had had longer exposure to French foreign language instruction.

We see, then, that analyses using various indicators of children's language proficiency all converge on the conclusion that, in general, greater proficiency predicts higher scores on FDQ and CA, and lower scores on CF. It is striking from these findings that non-native speakers can score as high as native speakers on various components of skill in giving definitions; this is true not only for speakers of English as a second language, who get massive exposure to it, but even for a few speakers of French as a second language, whose exposure is strictly through formal instruction.

Definitions and School Achievement

The more central question of interest is the relationship between performance on the definitions task and skill in school achievement, particularly reading. To assess these relationships, we calculated correlations between the English definitions scores and CAT Reading, Language, and Math total scores. There are two ways to do this analysis: on the total population, such that the second-grade CAT scores, for example, come from current second graders, current third graders, current fourth graders, and current fifth graders; and per grade level, such that second-grade CAT scores are analyzed for current second graders, third-grade CAT scores for current third graders, etc. The advantage of the first analysis is that it uses all the available data, and that it enables one to see predictive relationships (good readers in third grade are good definers in fifth grade, for example). The advantage of the second analysis is that it reflects a much clearer and more comprehensible set of

Table 7

Significant Correlations between Scores on the English Definition Task and The Reading, Language, and Math Total National Percentile Scores on the California Achievement Test.

	Reading					Language					Math				
Grade	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
FDQ	-	.16	-	.45	.50	.74	-	-	-	.45	-	-	-	-	-
FD5	-	-	-	-.28	-	-	-	-	-	-	-	-	-	-	-
IDQ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CF	-	-.43	-.33	-.48	-	-	-	-	-.30	-	-	-.32	-	-	-
CA	-	.33	.24	.38	.69	-	-	.21	-	.47	-	-	.34	-	-

contingencies; children's scores on two tests, all collected within a period of a few months, are compared to one another. Since we had no clear basis for choosing between these two analyses, we decided to do both. Fortunately, the general pictures they give are highly consonant. We report the first analysis here, since it uses more data and is based on larger n's.

Table 7 presents summaries of the correlational analyses based on the English definitions scores and the percentile CAT scores, based on national norms. It can be seen that the formal definitional scores correlate positively with the reading and language CAT scores, that informal definitional scores show no correlations, that use of conversational features shows negative correlations only, most strongly with reading, and that the communicative adequacy score shows positive correlations which become larger as the children get older. These results are, in fact, precisely what our model of the relationship between decontextualized language skill and literacy had predicted. Note that the math subtest shows much less relationship, positive or negative, to any of the definitions subscores.

The pattern for the relationships between CAT scores (in English) and definitions scores on the French battery are much the same as for English (see Table 8), though perhaps a bit weaker for the relation between CA and CAT scores. French FDQ scores were not related to CAT scores but the use of conversational features in French definitions showed quite general negative correlations with the CAT subscores (one positive correlation occurred, for math in grade 5). Obviously, the children's proficiency in French was in general considerably lower than their proficiency in English. It is striking that the use of decontextualized, formal definitions in French showed any interpretable relation to school achievement on standardized tests administered in English. This finding confirms the importance of decontextualized oral language skills as a correlate of school achievement and of conversational strategies

Table 8

Significant Correlations between Scores on the French Definition Task and The Reading, Language, and Math Total National Percentile Scores on the California Achievement Test.

	Reading					Language					Math				
Grade	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
FDQ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FD5	-	-	.21	-	-	-	-	-	-	-	-	-	-	-	-
IDQ	-	-	-	-	-	-	-	-.24	-	-	-	-	-	-	-
CF	-	-.43	-.33	-	-	-	-.26	-	-	-	-	-.31	-.27	-	.41
CA	-	.33	-	-	-	-	-	-	-	-	-	-	.34	.32	-

in tasks like this as a negative indicator of school literacy. Perhaps the most striking difference between the results for English and French definitions is that English definitions scores related most strongly to reading and hardly at all to math. French scores related to all three areas of English achievement, as strongly to math as to reading. These results show the impact of the children tested in French who were "good school learners", thus also good test takers in general. Those children may have had only moderate proficiency in French, but they successfully analyzed the test demands of the definitions test as they did of the CAT battery.

Discussion

We have confirmed that children's scores on tests of school literacy are strongly related to their tendencies to perform in a decontextualized way on an open-ended language task, and negatively correlated to their tendencies to rely on a conversational model in such a task. We feel these findings support our claim that skills in decontextualized language are related to literacy and to school achievement, and suggest that further analyses of decontextualized performances are fully justified.

Clearly, much remains to be done even within the limits of the study reported here. We need, in the first place, to look at children's native language skills on the definition task, to see whether skills acquired in English show "retro-transfer" to a home language not used for school tasks. Our findings that the advanced school-learners of English scored just as well on all the definitions subscores as the native monolinguals, and that children from monolingual non-English-speaking homes scored better than children from homes where English was used as a third language make clear that children can perform as well on a fairly challenging linguistic task like this in their second language as in a native language. A further exploration of the data will involve looking at the pattern of correlations between

definitions subscores and CAT scores for the native and non-native speakers separately.

The UNIS children were subjected to a test battery that included several different assessments of decontextualized language skill, and of conversational skill as well. A high priority in our research program involves relating performance on the definitions task to performance on other tasks, including oral and written picture description, retelling a short wordless film, carrying on a conversation for four minutes, and explaining how to play a game. We hope to find that certain variables from the various tasks correlate highly, such that we can define some core markers for decontextualized language skill. In pilot analysis of data from 20 UNIS children, we found that the FDQ score correlated with the tendency to revise in a written task and to self-correct in an oral picture description task. This kind of pattern, but on a broader scale, is what we will be seeking in the further analysis of the UNIS test battery.

Understanding the reasons why children succeed and why they fail in school is crucial if we are to promote success and prevent failure. We believe that certain oral language skills are prerequisite to high levels of performance in literate tasks, both in school and out, and that the skills required for reading comprehension and for writing are probably more easily acquired by most children in the oral mode. Some homes and some classrooms provide the oral language experiences that promote these skills, which are complex and take considerable time to acquire. When attempting to predict children's capacity to participate in classroom discussions and meet classroom literacy demands (for example, when assessing second language proficiency in order to place children in bilingual vs. mainstream classes), it is crucial to assess these decontextualized skills, because it is these skills that the child will need to succeed in school tasks. A model of oral language proficiency that pays attention to performance on decontextualized tasks like giving definitions, as well as to contextualized tasks like making conversation with

familiar adults, would generate better decisions about when children are capable of performing adequately in mainstream classrooms, and might also give us guidelines about the kinds of oral language skills schools interested in promoting literacy should develop.

Achieving in literate tasks makes a complex set of demands upon children (or adults). The enterprise described in this paper represents an attempt to analyze those demands, and to describe how components of them might show up in other tasks that are not strictly literate, such as the oral task of defining words. We suggest that mastering many of the component skills that are necessary for literacy may occur in the context of certain kinds of oral discourse, at home and at school. Understanding how children acquire these oral discourse skills, and the ways in which their mastery of them relates to the achievement commonly tested in classrooms will give us insights into the process by which all children might acquire school literacy.

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ABOUT THE AUTHORS

Catherine E. Snow (Ph.D., Psychology, McGill University) is Associate Professor at Harvard Graduate School of Education. She is on the staff of CLEAR, through which she conducts research in language acquisition.

Herlinda Cancino (Ph.D., Human Development Program, School of Education, Harvard University) is a Visiting Lecturer at the Graduate School of Education, Stanford University. Her research interests are in the area of second language acquisition.

Paulina Gonzalez (Ph.D. Candidate, Administration Policy and Social Planning, Harvard Graduate School of Education).

Elizabeth Shriberg (Graduate Student, Developmental Psychology, University of California, Berkeley).